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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,242	05/30/2001	Jitendra Singh Gocla	51048-2 DIV (3568-33-000)	9573

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EXAMINER	
EGAN, BRIAN P	
ART UNIT	**PAPER NUMBER**
1772	2

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF 2

Office Action Summary	Application No.	Applicant(s)	
	09/870,242	GOELA ET AL.	
	Examiner	Art Unit	
	Brian P. Egan	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 20-33 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 27-33 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 20-26 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 20-26, drawn to an apparatus for forming solid deposits from gaseous precursors, classified in class 118, subclass 715.

II. Claims 27-33, drawn to a hollow silicon carbide shell, classified in class 428, subclass 34.4.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the product can be made by a materially different apparatus. The product need not be formed via chemical vapor deposition (CVD) and can instead be made by using a molding apparatus.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. John Piskorski on June 25, 2002 a provisional election was made with traverse to prosecute the invention of Group II, claims 27-33. Affirmation of this election must be made by applicant in replying to this Office action. Claims

20-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

7. Claims 27-30 and 33 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lu et al. (#5,904,778) and the *MEMS Clearinghouse Material Database*.

Lu et al. disclose a hollow silicon carbide shell ("composite silicone carbide article"; see abstract) having a ratio of external perimeter to wall thickness greater than 200 ("the overall dimensions of the chamber are relatively large, being about 15 inches... diameter" (Col. 5, lines 51-53) which corresponds to a perimeter of over 47 inches; "thickness of at least 3mm" (Col. 14,

lines 57-58) which corresponds to a wall thickness of 0.118 inches; therefore, the ratio of external perimeter to wall thickness is about 47/.118, i.e., 398) that may be in a cylindrical (Col. 5, lines 45-46) or frustroconical shape ("radially varying, generally axially symmetric shape" (Col. 5, line 51)). Although Lu et al. do not explicitly state that the density of the silicon carbide is at least 3.15 grams per cubic centimeter, Lu et al. state that the silicon carbide has a metal impurity of less than 100 parts per billion (Col. 14, lines 27-29). The silicon carbide as taught by Lu et al. is inherently near purity and silicon carbide in bulk has a density of greater than 3.2 grams per cubic centimeter as evidenced by *MEMS Clearinghouse Material Database* (see p.1 of printout). Therefore, the limitation of a silicon carbide density of at least 3.15 grams per cubic centimeter is inherently met.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lu et al. ('778).

The teachings of Lu et al. are relied upon as detailed above. Lu et al. fail to explicitly state that external perimeter is in excess of 65 inches. Lu et al. state, however, that the 15 inch diameter of the chamber is for processing wafers of 200mm diameter (Col. 5, lines 51-54). Although there may be a slight problem in scaling up the size of the chamber for processing

300mm diameter wafers although the technology for doing such is well known in the art (Col. 5, lines 54-57). Therefore, it would have been obvious to one of ordinary skill in the art to have a chamber with a perimeter greater than 65 inches such that it can accommodate production of wafers 300mm in diameter and greater. Furthermore, such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

10. Claims 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karni et al. (#5,323,764) and the *MEMS Clearinghouse Material Database*.

Karni et al. teach a hollow silicon carbide shell that is frustroconical (see Abstract) or cylindrical in shape (Col. 6, lines 1-2). Although Karni et al. do not explicitly state the perimeter or thickness of the shell, Karni et al. state that the shape is not critical (Col. 5, line 57). Therefore, it would have been obvious to modify the perimeter and thickness of the shell depending on the size of the desired end product. Furthermore, such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955). Finally, the limitation of a silicon carbide density greater that 3.15 grams per cubic centimeter is inherently met since it is notoriously well known that silicon carbide has a density of 3.2 grams per cubic centimeter as evidenced by *MEMS Clearinghouse Material Database* (see p.1 of printout). Given that Karni et al. use silicone carbide, the density limitation is inherently met. The burden is upon the applicant to prove otherwise.

Conclusion

11. Although not relied upon in any of the rejections above, the examiner would like to direct the applicants attention to references further indicating the current state of the art:

U.S. 5,720,933 to Srinivasan

U.S. 5,071,685 to Kasprzyk

U.S. 4,999,228 to Matsumoto et al.

U.S. 6,268,061 B1 to Tanino

U.S. 4,070,197 to Coes

DE 199 62 831 A1 to Krenkel

WO 96/40600 to Vayda

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Egan whose telephone number is 703-305-3144. The examiner can normally be reached on M-F, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 703-308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BPE
June 27, 2002

HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

6/28/02